

CLAIMS

What is claimed is:

- 5 1. A method for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, including:
 - extracting a source address from the packet;
 - finding a per-user routing table corresponding to said source address, said per-user routing table containing entries corresponding to one or more currently accessible
 - 10 networks for the user and the range of network addresses corresponding to said currently accessible networks;
 - extracting a destination address from the packet;
 - seeking an entry in said matching per-user routing table with a range of network addresses containing said destination address;
 - 15 routing the packet to a matching network if said destination address is contained within one of said ranges of network addresses for said currently accessible networks; and
 - routing the packet to a default network if said destination address is not contained within one of said ranges of network addresses for said currently accessible networks.
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2. The method of claim 1, wherein said matching network is said accessible network corresponding to said range of addresses in which said destination address is found.

3. The method of claim 1, wherein said default network is the largest accessible network.

4. A method for routing a packet sent from a user in a system in which the user may
5 be connected to multiple networks simultaneously, including:

extracting a source address from the packet;

finding a per-user routing table corresponding to said source address, said per-user
routing table containing entries corresponding to one or more currently accessible
networks for the user and the range of network addresses corresponding to said currently
10 accessible networks;

extracting a destination address from the packet;

seeking an entry in said matching per-user routing table with a range of network
addresses containing said destination address;

routing the packet to a matching network if said destination address is contained
15 within one of said ranges of network addresses for said currently accessible networks;
and

ignoring said packet and alerting the user to that effect if said destination address
is not contained within one of said ranges of network addresses for said currently
accessible networks.

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5. The method of claim 4, wherein said matching network is said accessible network
corresponding to said range of addresses in which said destination address is found.

6. A method for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, said packet having a destination network, the method including:

looking up said destination network in a table, each entry in said table having a

5 router network address corresponding to each network currently accessible;

establishing a tunneling session to said matching router network address; and

forwarding the packet to said router network address through said tunneling session.

10 7. The method of claim 6, wherein said table is contained in a service profile.

8. A method for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, including:

extracting a source address from the packet;

15 finding a per-user routing table corresponding to said source address, said per-user routing table containing entries corresponding to one or more accessible networks for the user and the range of network addresses corresponding to said currently accessible networks;

extracting a destination address from the packet;

20 reading the entries of said matching per-user routing table, looking for a range of network addresses containing said destination address;

determining a destination network based upon a matching entry in said per-user routing table if said destination address is contained within one of said ranges of network addresses for said currently accessible networks;

5 routing the packet to a default network if said destination address is not contained within one of said ranges of network addresses for said currently accessible networks.

looking up said destination network in a table, each entry in said table having a router network address corresponding to each network currently accessible;

establishing a tunneling session to said corresponding router network address; and

10 forwarding the packet to said router network address through said tunneling session.

9. The method of claim 8, wherein said destinations network is one of said accessible networks corresponding to said range of addresses in which said destination address is found.

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10. The method of claim 8, wherein said default network is the largest accessible network.

11. The method of claim 8, wherein said table is contained in a service profile.

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12. A method for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, including:

extracting a source address from the packet;

finding a per-user routing table corresponding to said source address, said per-user routing table containing entries corresponding to one or more accessible networks for the user and the range of network addresses corresponding to said currently accessible
5 networks;

extracting a destination address from the packet;

reading the entries of said matching per-user routing table, looking for a range of network addresses containing said destination address;

determining a destination network based upon a matching entry in said per-user
10 routing table if said destination address is contained within one of said ranges of network addresses for said currently accessible networks;

ignoring said packet and alerting the user to that effect if said destination address is not contained within one of said ranges of network addresses for said currently accessible networks;

15 looking up said destination network in a table, each entry in said table having a router network address corresponding to each network currently accessible;

establishing a tunneling session to said corresponding router network address; and

forwarding the packet to said corresponding router network address through said tunneling session.

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13. The method of claim 12, wherein said matching network is one of said accessible networks corresponding to said range of addresses in which said destination address is found.

14. The method of claim 12, wherein said table is contained in a service profile.

15. A gateway for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, including:

5 a packet source address extractor;

one or more per-user routing tables, each of said routing tables containing entries corresponding to one or more currently accessible networks for the user and the range of network addresses corresponding to said currently accessible networks;

10 a per-user routing table searcher coupled to said packet source address extractor and coupled to said one or more per-user routing tables;

a packet destination address extractor;

a per-user routing table entry seeker coupled to said packet destination address extractor and coupled to said per-user routing table searcher;

15 a matching network router coupled to said per-user routing table entry seeker if the destination address of the packet is contained within one of said ranges of network addresses for said currently accessible networks; and

a default network router coupled to said per-user routing table entry seeker if the destination address of the packet is not contained within any of said ranges of network addresses for said currently accessible networks.

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16. The gateway of claim 15, wherein said matching network router is coupled to an accessible network corresponding to said range of addresses in which said destination address is found.

19. The gateway of claim 18, wherein said matching network router is coupled to an accessible network corresponding to said range of addresses in which said destination address is found.

20. A gateway for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, said packet having a destination network, the gateway including:

a table, each entry in said table having a router network address corresponding to each network currently accessible;

a destination network table entry searcher coupled to said table;

a tunneling session initiator coupled to said destination network table entry searcher; and

a packet forwarder coupled to said tunneling session initiator.

21. The gateway of claim 20, wherein said table is contained in a service profile.

22. A gateway for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, including:

a packet source address extractor;

one or more per-user routing tables, each of said routing tables containing entries corresponding to one or more currently accessible networks for the user and the range of network addresses corresponding to said currently accessible networks;

a per-user routing table searcher coupled to said packet source address extractor
and coupled to said one or more per-user routing tables;

a packet destination address extractor;

a per-user routing table entry seeker coupled to said packet destination address
5 extractor and coupled to said per-user routing table searcher;

a matching network router coupled to said per-user routing table entry seeker if the
destination address of the packet is contained within one of said ranges of network
addresses for said currently accessible networks;

a default network router coupled to said per-user routing table entry seeker if the
10 destination address of the packet is not contained within any of said ranges of network
addresses for said currently accessible networks;

a table, each entry in said table having a router network address corresponding to
each network currently accessible;

a destination network table entry searcher coupled to said table;

15 a tunneling session initiator coupled to said destination network table entry
searcher; and

a packet forwarder coupled to said tunneling session initiator.

23. The gateway of claim 22, wherein said matching network router is coupled to an
20 accessible network corresponding to said range of addresses in which said destination
address is found.

24. The gateway of claim 22, wherein said default network router is coupled to the largest accessible network.

25. The gateway of claim 22, wherein said table is contained in a service profile.

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26. A gateway for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, including:

a packet source address extractor;

one or more per-user routing tables, each of said routing tables containing entries
10 corresponding to one or more currently accessible networks for the user and the range of network addresses corresponding to said currently accessible networks;

a per-user routing table searcher coupled to said packet source address extractor and coupled to said one or more per-user routing tables;

a packet destination address extractor;

15 a per-user routing table entry seeker coupled to said packet destination address extractor and coupled to said per-user routing table searcher;

a matching network router coupled to said per-user routing table entry seeker if the destination address of the packet is contained within one of said ranges of network addresses for said currently accessible networks;

20 a user interface, coupled to said per-user routing table if the destination address of the packet is not contained within any of said ranges of network addresses for said currently accessible networks, said user interface adapted to send a message to the user indicating that the packet is being ignored by the gateway;

a table, each entry in said table having a router network address corresponding to each network currently accessible;

a destination network table entry searcher coupled to said table;

a tunneling session initiator coupled to said destination network table entry

5 searcher; and

a packet forwarder coupled to said tunneling session initiator.

27. The gateway of claim 26, wherein said matching network router is coupled to an accessible network corresponding to said range of addresses in which said destination
10 address is found.

28. The gateway of claim 26, wherein said table is contained in a service profile.

29. A program storage device readable by a machine, tangibly embodying a program
15 of instructions executable by the machine to perform method steps for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, said method steps comprising:

extracting a source address from the packet;

finding a per-user routing table corresponding to said source address, said per-user
20 routing table containing entries corresponding to one or more currently accessible networks for the user and the range of network addresses corresponding to said currently accessible networks;

extracting a destination address from the packet;

seeking an entry in said matching per-user routing table with a range of network addresses containing said destination address;

routing the packet to a matching network if said destination address is contained within one of said ranges of network addresses for said currently accessible networks;

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routing the packet to a default network if said destination address is not contained within one of said ranges of network addresses for said currently accessible networks.

30. The program storage device of claim 29, wherein said matching network is one of
10 said accessible networks corresponding to said range of addresses in which said destination address is found.

31. The program storage device of claim 29, wherein said default network is the
largest accessible network.

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32. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for routing a packet sent from a user in a system in which the user may be connected to multiple networks simultaneously, said method steps comprising:

20 extracting a source address from the packet;

[finding a] per-user routing table corresponding to said source address, said per-user routing table containing [entries corresponding to one or more] currently accessible

networks for the user and the range of network addresses corresponding to said currently accessible networks;

extracting a destination address from the packet;

5 seeking an entry in said matching per-user routing table with a range of network addresses containing said destination address;

routing the packet to a matching network if said destination address is contained within one of said ranges of network addresses for said currently accessible networks; and

10 ignoring said packet and alerting the user to that effect if said destination address is not contained within one of said ranges of network addresses for said currently accessible networks.

33. The program storage device of claim 32, wherein said matching network is one of said accessible networks corresponding to said range of addresses in which said
15 destination address is found.

34. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for routing a packet sent from a user in a system in which the user may be connected to multiple networks
20 simultaneously, said packet having a destination network, said method steps comprising:

looking up said destination network in a table, each entry in said table having a router network address corresponding to each network currently accessible;

establishing a tunneling session to said corresponding router network address; and

forwarding the packet to said corresponding router network address through said tunneling session.

35. The program storage device of claim 34, wherein said table is contained in a
5 service profile.

36. A program storage device readable by a machine, tangibly embodying a program
of instructions executable by the machine to perform method steps for routing a packet
sent from a user in a system in which the user may be connected to multiple networks
10 simultaneously, said method steps comprising:

- extracting a source address from the packet;
- finding a per-user routing table corresponding to said source address, said per-user
routing table containing entries corresponding to one or more currently accessible
networks for the user and the range of network addresses corresponding to said currently
15 accessible networks;
- extracting a destination address from the packet;
- reading the entries of said matching per-user routing table, looking for a range of
network addresses containing said destination address;
- determining a destination network based upon a matching entry in said per-user
20 routing table if said destination address is contained within one of said ranges of network
addresses for said currently accessible networks;
- routing the packet to a default network if said destination address is not contained
within one of said ranges of network addresses for said currently accessible networks.

looking up said destination network in a table, each entry in said table having a
router network address corresponding to each network currently accessible;

establishing a tunneling session to said corresponding router network address; and

forwarding the packet to said corresponding router network address through said

5 tunneling session.

37. The program storage device of claim 36, wherein said matching network is said
accessible network corresponding to said range of addresses in which said destination
address is found.

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38. The program storage device of claim 36, wherein said default network is the
largest accessible network.

39. The program storage device of claim 36, wherein said table is contained in a
15 service profile.

40. A program storage device readable by a machine, tangibly embodying a program
of instructions executable by the machine to perform method steps for routing a packet
sent from a user in a system in which the user may be connected to multiple networks

20 simultaneously, said method steps including:

extracting a source address from the packet;

finding a per-user routing table corresponding to said source address, said per-user
routing table containing entries corresponding to one or more currently accessible

networks for the user and the range of network addresses corresponding to said currently accessible networks;

extracting a destination address from the packet;

reading the entries of said matching per-user routing table, looking for a range of

5 network addresses containing said destination address;

determining a destination network based upon a matching entry in said per-user routing table if said destination address is contained within one of said ranges of network addresses for said currently accessible networks;

10 ignoring said packet and alerting the user to that effect if said destination address is not contained within one of said ranges of network addresses for said currently accessible networks;

looking up said destination network in a table, each entry in said table having a router network address corresponding to each network currently accessible;

establishing a tunneling session to said corresponding router network address; and

15 forwarding the packet to said corresponding router network address through said tunneling session.

41. The program storage device of claim 40, wherein said matching network is one of said accessible networks corresponding to said range of addresses in which said

20 destination address is found.

42. The program storage device of claim 40, wherein said table is contained in a service profile.